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| Notice of Allowability | Application N . | Applicant(s) | |
| | 10/730,356 | TAM ET AL. | |
| | Examiner | Art Unit | |
| | Long Nguyen | 2816 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the application filed on 11/24/03 and the phone interview on 01/13/05.
2. ☒ The allowed claim(s) is/are 1-16 and 19.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date <u>01/13/05</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-19, drawn to a sense amplifier and method thereof, classified in class 327, subclass 51.
 - II. Claim 20, drawn to a multiplexer for multiplexing a pair of sense-amp circuits, classified in class 327, subclass 407.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because any known sense amplifier circuit having a delay of one-gate delay could be used in the multiplexer. The subcombination has separate utility such as it may be used in any other devices such as in memory devices.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

2. During a telephone conversation with Mr. George Leavell on 12/14/04, a provisional election was made without traverse to prosecute the invention of Group I, claims 1-19.

Affirmation of this election must be made by applicant in replying to this Office action. Claim

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20 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Mr. George Leavell on 01/13/05.

The application has been amended as follows:

In The Drawings

The following changes to the drawings have been approved by the examiner and agreed upon by applicant: In Figures 2 and 4, reference numeral "214" at the input of inverter 208 will be changed to --216--. In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

In The Specification

On page 3, line 1, "to the. As" has been changed to --to the threshold level. As--.

On page 10, line 4, "sense amp 106" has been changed to --skewed inverter 106--.

On page 10, line 5, "input t the" has been changed to --input of the--.

On page 11, line 3, "can b used" has been changed to --can be used--.

On page 11, line 21, "PMS" has been changed to --PMOS--.

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On page 11, line 21, "output of" has been changed to --output 214 of--.

In The Claims

Claim 1, line 5, "coupled to a" has been changed to --coupled in series with a--.

Claim 1, line 6, "in parallel to" has been changed to --to latch--.

Claim 3, line 3, "output of" has been changed to --output data line of--.

Claim 6, line 1, "a NAND" has been changed to --a first NAND--.

Claim 6, line 2, "the NAND" has been changed to --the first NAND--.

Claim 6, line 4, "the NAND" has been changed to --the first NAND--.

Claim 7, lines 1-2, "is not in series with a data signal path through" has been changed to --having an output directly connected to the output data line of--.

Claim 8, line 1, "further comprising:" has been changed to --wherein the output data line of the first inverter is coupled to a first input of a second NAND gate; and a second input of the second NAND gate is coupled to a second amp circuit.--.

Claim 8, lines 2-5, "a second NAND ... second NAND gate;" has been deleted.

Claim 11, line 3, "a data signal on" has been changed to --the data signal level on--.

Claim 11, line 6, "pre-charging the" has been changed to --pre-charging of the--.

Claim 11, line 6, "and" has been changed to --coupling a select device in series with a discharge path of the first inverter; and--.

Claim 11, line 7, "a control signal is received." has been changed to --a select signal is received in a first state.--.

Claim 12, line 2, "the input" has been changed to --an output--.

Claim 13, line 2, "output of" has been changed to --output data line of--.

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Claim 13, line 3, "received." has been changed to --received in the first state.--.

Claim 14, line 2, "received." has been changed to --received in the first state.--.

Claim 15, "signal." has been changed to --signal level.--.

Claim 16, line 1 "signal includes" has been changed to --signal level includes--.

Claim 16, line 2, "output of" has been changed to --output data line of--.

Claims 17, 18 and 20 have been canceled.

Reasons For The Above Changes

The above changes have been made to correct the indefiniteness problems and the minor informalities in the claims so that the claims are clear. Due to the indefiniteness problems in claims 17 and 18, applicant's representative (Mr. George Leavell) requests cancellation of claims 17 and 18.

Claim 20 has been canceled because this application is in condition for allowance except for the presence of claim 20 to the non-elected invention (Group II) without traverse.

REASONS FOR ALLOWANCE ✓

4. Claims 1-16 and 19 are allowed. The following is an examiner's statement of reasons for allowance:

Claim 1 is allowed because the prior art of record fails to disclose or suggest a sense-amp circuit which includes all the limitations of this claim. In particular, the prior art of record fails to disclose or suggest that the sense-amp circuit including a select device coupled in series with a discharge path of the first inverter in combination with the pre-charge circuit, the keeper circuit and the driver circuit as recited in the claims.

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Claims 2-10 are allowed because they depend on claim 1.

Claim 11 is allowed because the prior art of record fails to disclose or suggest a method of detecting a data signal level including, in combination with other limitations, the steps of outputting an output data signal level in less than a two-gate delay, coupling a select device in series with a discharge path of the first inverter and resetting the output data signal level when a select signal is received in a first state.

Claims 12-16 and 19 are allowed because they depend on claim 11.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directly to Examiner Long Nguyen whose telephone number is (571) 272-1753. The Examiner can normally be reached on Monday to Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached at (571) 272-1740. The fax number for this group is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

January 19, 2004

A handwritten signature in cursive script, appearing to read 'Long Nguyen', with a long horizontal flourish extending to the right.

Long Nguyen
Primary Examiner
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